

In re Patent Application of:  
**VIGIL ET AL.**  
Serial No. **09/840,481**  
Filing Date: **April 23, 2001**  
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**In the Claims:**

Claims 1-24 (Cancelled).

25. (Previously Presented) A method for mitigating multipath in a digital television signal (DTV) that is ATSC DTV compliant, the method comprising:

generating a training sequence that is ATSC DTV compliant;

multiplexing the training sequence with DTV data to generate a multiplexed DTV data stream with the training sequence embedded therein;

modulating the multiplexed DTV data stream for transmission;

receiving a transmitted DTV signal;

detecting correlation peaks in the received DTV signal based upon the multiplexed training sequence embedded therein; and

using the detected correlation peaks to mitigate multipath in the received DTV signal.

Claims 26-27 (Cancelled).

28. (Previously Presented) A method according to Claim 25 wherein the training sequence is based upon a priori knowledge of the DTV data.

29. (Previously Presented) A method according to Claim 28 wherein the a priori knowledge includes modulation characteristics of the DTV data.

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30. (Previously Presented) A method according to Claim 29 further comprising estimating the modulation characteristics of the DTV data.

31. (Previously Presented) A method for mitigating multipath in a digital television signal (DTV) that is ATSC DTV compliant, the method comprising:

estimating modulation characteristics of DTV data to be transmitted;

generating a training sequence that is ATSC DTV compliant and is based upon the estimated modulation characteristics of the DTV data;

multiplexing the training sequence with the DTV data to generate a multiplexed DTV data stream with the training sequence embedded therein; and

modulating the multiplexed DTV data stream for transmission.

32. (Previously Presented) A method according to Claim 31 further comprising:

receiving a transmitted DTV signal;

detecting correlation peaks in the received DTV signal based upon the multiplexed training sequence embedded therein; and

using the detected correlation peaks to mitigate multipath in the received DTV signal.

Claims 33-34 (Cancelled).

35. (Previously Presented) A digital television

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(DTV) system comprising:

    a transmitting system comprising

        a circuit for generating a training sequence  
that is ATSC DTV compliant,

        a multiplexer for multiplexing the training  
sequence with DTV data that is ATSC DTV compliant to  
generate a multiplexed DTV data stream with the  
training sequence embedded therein,

        a modulator connected to said multiplexer for  
modulating the multiplexed DTV data stream, and

        a transmitter connected to said modulator for  
transmitting a DTV signal based upon the multiplexed  
DTV data stream; and

    a receiving system for receiving the transmitted DTV  
signal and comprising a correlator for detecting correlation  
peaks in the received DTV signal based upon the multiplexed  
training sequence embedded therein, and using the detected  
correlation peaks to mitigate multipath in the received DTV  
signal.

Claims 36-37 (Cancelled).

38. (Previously Presented) A DTV system according to  
Claim 35 wherein the training sequence is based upon a priori  
knowledge of the DTV data.

39. (Previously Presented) A DTV system according to  
Claim 38 wherein the a priori knowledge includes modulation  
characteristics of the DTV data.

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40. (Previously Presented) A DTV system according to Claim 39 wherein said multiplexer comprises an estimator for estimating the modulation characteristics of the DTV data.

41. (Previously Presented) A DTV system according to Claim 35 wherein said receiving system comprises a digital television.

42. (Previously Presented) A digital television (DTV) comprising:

an input for receiving a transmitted DTV signal that is ATSC DTV compliant and comprising a multiplexed DTV data stream with a training sequence embedded therein; and

a correlator for detecting correlation peaks in the received DTV signal based upon the multiplexed training sequence embedded therein, and using the detected correlation peaks to mitigate multipath in the received DTV signal.

43. (Previously Presented) A DTV according to Claim 42 further comprising a demodulator connected to said correlator for demodulating the received DTV signal.

Claims 44-45 (Cancelled).

46. (Previously Presented) A DTV according to Claim 42 wherein the training sequence is based upon a priori knowledge of the DTV data.

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47. (Previously Presented) A DTV according to Claim 46 wherein the a priori knowledge includes modulation characteristics of the DTV data.